REMARKS

Claims 1-17, of which claims 1, 9, and 14 are Independent Claims, are currently pending. The March 18, 2004 Office Action requests that certain updates be made to the Specification, i.e., update status of related Applications providing serial numbers. In addition, the Office Action notes that there are two claims inadvertently labeled as "claim 7"; therefore, the claims should be renumbered. Claims 1-3 and 8-17 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Dodgen, U.S. Patent No. 6,453,329 ("Dodgen '329"). In addition, Claims 4-8 stand rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite.

After a careful review of the cited references and the outstanding Office Action, Applicants respectively traverse and request favorable reconsideration in view of the following claim amendments and remarks.

I. APPLICANTS' PRESENTLY PENDING CLAIMS

Applicants' presently pending claims are generally directed to software architecture and, more particularly, to a software architecture for data use in multiple user applications in a client device. (Applicants' Specification at p. 2 lines 12-13) (emphasis added). Such software architecture is generally concerned with application programs running on a client device that display information obtained from a wide area network to a user through a user interface. (Applicants' Specification at p. 2 lines 15-16).

As Applicants explain, typical users of computer systems use their computers to perform a variety of tasks, such as word processing, spread sheets, games, and email. Each of these tasks typically involves activating a user application program that interacts with the user to perform the task. An application is a software program that carries out a task, i.e. a database manager, a spreadsheet, a communications package, a graphics program or a word processor. User input is

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received from the user via user input devices, such as a mouse and keyboard, and information is output to the user by outputting information to the user via a display, such as a monitor.

Each user application typically has its own user interface. In other words, each application accesses data that is typically specific to the application, processes the data, and assembles and formats textual and graphical data for display to the user. The data for each application is typically formatted and structured specifically for the application, so, unless multiple applications are designed to share data, it is often difficult for one application program to access and utilize the data from another application program. Furthermore, the task of assembling and formatting data for output to the user can be complex. Each user application typically uses the interface drivers provided by the operating system of the computer system to output information to the display of the computer system. However, the user interface software for each program is often substantially custom for that program and can represent a significant amount of the code for each application. (Applicants' Specification at p. 2 line 17- p. 3 line 13).

One concern with such conventional systems is that the separate graphics capability required for each of the applications residing on a client device can become a significant limitation in a client device having limited resources. Likewise, the inability to efficiently share data across multiple applications can also pose a problem. Therefore, the need remains for a software architecture that efficiently uses the resources available in a client device. (Applicants' Specification at p. 12 lines 14-18) (emphasis added).

Applicants' presently pending claims are generally directed to solving at least this need. For example, Applicants' FIG. 11 illustrates an embodiment of a software architecture 500 for client device 320. Architecture 500 includes an operating system 510 for controlling the resources of the client device and activating application program 520 and channel application

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302. Architecture 500 also includes a display driver 530 for driving the display monitor of client device 530, user interface drivers 540 for receiving and processing user input signals from a user interface, including knob 322, and a communications driver 550 for handling a communications via network interface circuitry for connection 22. (Applicants' Specification at p. 28 line 18 – p. 29 line 3).

Architecture 500 also includes a thin server process 560, which is a server process residing in the client device rather than a remote server, that accesses a template store 562 and an Extended Markup Language (XML) database 564. The QNX OS discussed above includes a server that may be modified for use as the thin server process 560. XML and the more familiar Hypertext markup language (HTML) are both restricted forms of the Standard Generalized Markup Language (SGML) defined by the International Standards Organization (ISO) standard 8879 (1986). XML 1.0 (February 10, 1998), herein incorporated by reference, is defined by the World Wide Web Consortium (W3C) and is available at www.w3c.com. (Applicants' Specification at p. 29 line 21 – p. 30 line 6).

When the thin server process 560 is activated by channel selection application 402 or user application 520, it receives an index in template store 562 that identifies a template file corresponding to the calling application. Alternatively, the channel selection application may include a channel selector process and a channel browser process. The channel selector process is configured to receive and interpret the user input signals and pass to the channel browser a path to an index.shtml file corresponding to the user's selection. The channel browser process then sends an HTTP request to local thin server 560.

The template store 562 contains template files (which are SHTML files in this embodiment) that may act as templates for channels and applications residing on client device

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320. The SHTML files utilize server side include statements or entities (SSIs). During processing of an SHTML file, an entity, such as a SSI statement, is "included" or resolved when its replacement text is retrieved and further processed in place of the entity reference itself as though it were part of the document at the location the entity reference was recognized. Table 3 below shows an example of an SHTML template for a weather channel that has SSI statements conforms to the Weather.dtd of Table 1. (Applicants' Specification at p. 38 line 14 – p. 39 line 2).

Thin server process 560 is activated with a template ID that indicates a template file in template store 562. To demonstrate the processing performed in architecture 500, an example of an exchange of messages 600 involved in a user channel selection is described in the context of FIG. 12, which is a simplified architecture diagram. In FIG. 12, channel selection application 402 receives user input 602 from the input knob 322 as described above. Based on the pointer value and the user input, channel selection application 402 retrieves the channel ID value selected by the user. Channel selection application 402 sends the channel ID value for the selected channel, channel ID = "a" in this example, in a message 604 to the server process 560 for further processing or, with respect to the alternative discussed above, a channel selection process passes the channel ID to a channel browser application.

Thin server process 560 receives the channel ID = "a" through the operating system 510 or, alternatively, via an HTTP request from the channel browser, and, responsive thereto, searches template store 562 for a corresponding SHTML template file, as represented by arrow 610. When the SHTML template file for channel "a" is found, server process 560 retrieves it, as indicated by arrow 612, for further processing. When the user selects the weather channel, the SHTML file in Table 3 is selected. The SHTML file includes SSI statements that cause the

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server to retrieve data (as specified by tag values) from the database 564 and contains markup formatting information and may also include javascript and CGI commands and further URLs for additional data and image entities. In other words, the SHTML file is effectively a template for a page of information, similar to an HTML page, to be displayed to the user. (Applicants' Specification at p. 46 line 3 – p. 47 line 2).

Through the combination of templates, e.g. SHTML files, that reference common data objects, e.g. data in XML database 564, and a thin server process, the present invention may function as an efficient mechanism for providing user interface in a client device. For example, applications may be implemented by providing an SHTML file for each application and storing data in the XML database for the application. In this case, each application effectively utilizes the same user interface program, thereby saving the storage space that would otherwise be required to implement a user interface for each application, which reduces the memory footprint for the client device. This approach also simplifies the process of developing applications and channels because the user interface is already provided for other applications and channels. Also, the present approach makes efficient use of memory and bandwidth because, unlike a conventional HTML browser that requires that an entire HTML page of content data and mark-up be downloaded for each user access, only the content data needs to be updated in the XML database 564. Formatting and mark-up information need not be downloaded for each access and may instead be downloaded automatically during periods of low usage, e.g. late at night, as described below. (Applicants' Specification at p. 49 line 10 – p. 50 line 2).

Applicants' presently pending claims are directed to such a software architecture for a client device. For example, Independent Claim 1 expressly recites "a server process within the client device, the server process being configured to receive the template population request

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message from an application and, responsive thereto, use the value from the template identifier value from the template population request message to retrieve a corresponding template from the data store." Independent Claim 9 recites "[a] method for sharing data between multiple applications in a client device" and "outputting the first data object from the second application to a user of the client device." Independent Claim 13 expressly recites "[a] data display device" including "a microprocessor programmed to execute the first and second applications and a database manager for providing access to a database, where the microprocessor is configured to execute each of the first and second applications by retrieving the first and second display templates." (Emphasis added.)

II. OBJECTION TO APPLICANTS' SPECIFICATION

The Specification stands objected to for various alleged informalities. Applicants have amended the Specification to correct these alleged informalities and withdrawal of this objection is respectively requested.

III. CLAIM REJECTIONS UNDER 35 U.S.C. § 112

Claims 4-8 stand objected to under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Again, corrections have been made to overcome these formalities and withdrawal of this objection is respectively requested.

IV. CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

A. Independent Claims 1, 9, and 13

Claims 1-3 and 8-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dodgen '329. Applicants' respectively traverse.

To establish a *prima facie* case of obviousness, (i) there must be some suggestion or

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motivation to combine reference teachings, (ii) there must be a reasonable expectation of success, and (iii) the cited reference must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination must be found in the cited references (M.P.E.P. § 2142). Applicants respectfully submit that Dodgen '329 does not teach or suggest all the claim limitations of the currently pending Independent Claims.

Applicants respectively submit that Dodgen '329 does not teach or suggest software architecture for data use in multiple user applications in a client device. Indeed, as discussed below, Dodgen '329 actually teaches away of Applicants' system and method of utilizing the client device for data manipulation.

For example, Dodgen '329 appears to be directed to allocating data gathering and data processing and interpretation tasks between a handheld and a central computing unit. (Dodgen '329, Col. 1 lines 44-46) According to Dodgen '329, the handheld component (the "information retrieval computer") is responsible for acquiring and transmitting data, and the "host" or "server" component (the "data processing computer") is responsible for associating data records with an original script and for performing processing that is beyond the scope of the handheld system." (Dodgen '329 Col. 5 lines 2-8) (emphasis added). Therefore, Dodgen '329 appears to teach a conventional type of system that utilizes the resources available at the server, not the resources available in a client device for processing.

Moreover, Dodgen '329 appears to be absolutely silent as to teaching or suggesting "a server process within the client device." As Applicants explain, such a server process could comprise a thin server process 560 (which is a server process residing in the client device rather than a remote server) that accesses a template store 562 and an Extended Markup Language (XML) database 564. When the thin server process 560 is activated by channel selection

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application 402 or user application 520, it receives an index in template store 562 that identifies a template file corresponding to the calling application. Unlike Applicants' presently pending claims, Dodgen '329 appears to be directed to a handheld that merely acquires and transmits data and does not process or manipulate data objects using a server process.

The March 18, 2004 Final Office Action cites Dodgen '329 Col. 15 line 66 – Col. 16 line 2 for purportedly teaching

> a client/server process configured to retrieve from the data store a corresponding template using template tag, and retrieve data objects using the field tags (meaning tokens).

(March 18, 2004 Office Action at p. 4) (emphasis added). Applicants respectively traverse.

The cited portions Col. 15 line 66 – Col. 16 line 2 of Dodgen '329 do not recite a "server process residing in [a] client device." Rather, the cited portions of Dodgen '329 merely reiterate that Dodgen '329 is generally directed to a conventional type of configuration wherein the server performs "processing that is beyond the scope of the handheld system." For example, at Col. 15 lines 66-67, Dodgen '329 states that the expansion apparatus at the central office extracts the meaning tag from each data record, retrieves the associated script, and uses the information in the script to interpret and process each bit in the data record." (emphasis added)

The March 18, 2004 Final Office Action further purports that "[c]laims 9-17 are similar in scope as of claims 1-3 and 8 and hence are also rejected for the same rationale set forth above." (March 18, 2004 Office Action at p. 5). Applicants respectively traverse.

All of Applicants' presently pending independent claims are generally directed to various aspects of a method and apparatus for sharing common data objects among multiple applications in a client device. For example, Independent Claim 1 is generally directed to "a server process within the client device." The server process is "configured to receive the template population

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request message from an application and, responsive thereto, use the value from the template identifier value from the template population request message to retrieve a corresponding template from the data store." (Emphasis added.)

Independent Claim 9 is generally directed to a method "for sharing data between multiple applications in a client device." The method includes various steps, including the step of "outputting the first data object from the second application to a user of the client device." And Independent Claim 13 is generally directed to "[a] data display device." This display device includes "a microprocessor programmed to execute the first and second applications and a database manager for providing access to a database, where the microprocessor is configured to execute each of the first and second applications by retrieving the first and second display templates." Accordingly, Applicants respectively contend that each presently pending Independent Claim is directed to novel aspects of sharing common data objects among multiple applications in a client device and are allowable over the cited references for at least those reasons provided above.

B. Dependent Claims 2-8, 10-12, and 14-19

In light of the statements above, since Dodgen '329 does not teach or suggest all of the elements of the claimed invention, there can be no *prima facie* case of obviousness. Therefore, Applicants respectively submit that since Claims 2-8 are dependent on Independent Claim 1, Claims 10-12 are dependent on Independent Claim 9, and Claims 14-19 are dependent on Independent Claim 13, and since Dodgen '329 does not suggest all the limitations of these independent claims, then the dependent claims are allowable for at least the reasons stated above.

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V. SUMMARY

In conclusion, it is respectively submitted that Applicants have overcome each of the Examiner's rejections over the cited references.

It is submitted, therefore, that all currently pending Claims 1-17 are in condition for allowance, and early notice to this effect is earnestly solicited.

If there are any additional matters that may be resolved or clarified through a telephone interview, the Examiner is respectfully requested to contact Applicants' undersigned representative at (312) 913-0001.

Respectfully submitted,

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